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[Page 68725-68727]

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DEPARTMENT OF ENERGY

Office of Environment, Safety and Health

Environment, Safety and Health: Public Forums To Gather
Scientific Data, Information and Views Relevant to a Department of Energy (DOE) Beryllium
Standard

AGENCY: Office of Environment, Safety and Health, DOE.

ACTION: Notice of public data gathering Forums and opportunity to submit written
comments.

SUMMARY: The Department of Energy (the Department or DOE) will hold two public
forums to gather scientific data, information and views that will assist DOE in developing a
notice of proposed rulemaking intended to help establish a health standard to protect DOE
and DOE contractor employees from occupational exposure to beryllium. The Department
urges those individuals or organizations with an interest in this topic to attend and participate
in the forums as well as submit to DOE written comments and data on this subject.

DATES: The dates for the public forums are listed below.

January 15 and 16, 1997, 9:00 a.m. to 4:30 p.m. each day in Albuquerque, NM; and
January 22 and 23, 1997, 9:00 a.m. to 4:30 p.m. each day in Oak Ridge, TN.

To ensure that all interested individuals have an opportunity to participate, those who would
like to make an oral presentation should call in advance of the forum to schedule a 10-minute
block of time. These requests should be submitted to the Department no later than 4:30 p.m.,
eastern standard time, on January 10, 1997, for the Albuquerque forum and no later than 4:30
p.m., eastern standard time, on January 17, 1997, for the Oak Ridge forum. Written comments
and data (5 copies) must be received by the Department on or before February 7, 1997.

ADDRESSES: Requests to speak at the public forums, written comments and scientific data
(5 copies of each) should be addressed to Jacqueline D. Rogers, U.S. Department of Energy,
Office of Environment, Safety and Health, EH-51, 270CC, 19901 Germantown Road,
Germantown, MD 20874-1290; 301-903-5684.

The public data gathering forums will be held at the following locations.

Albuquerque, New Mexico:

The Albuquerque Convention Center,
West Building, Picuris Room--Lower Level,
401 Second Street, NW., Albuquerque, NM 87185.

Oak Ridge, Tennessee:

The American Museum of Science and Energy,
Auditorium, 300 South Tulane Avenue,
Oak Ridge, TN 37830.

FOR FURTHER INFORMATION CONTACT:

Jacqueline D. Rogers, U.S. Department of Energy, Office of Environment, Safety and Health,
EH-51, 270CC, 19901 Germantown Road, Germantown MD 20874-1290, 301-903-5684.

David Weitzman, U.S. Department of Energy, Office of Environment, Safety and Health,
EH-51, 270CC, 19901 Germantown Road, Germantown MD 20874-1290, 301-903-5401.

Paul Wambach, U.S. Department of Energy, Office of Environment, Safety and Health,
EH-61, 270CC, 19901 Germantown Road, Germantown MD 20874-1290, 301-903-7373.

SUPPLEMENTARY INFORMATION:

1. Background

The Department of Energy is gathering data, views and other relevant information to develop a health standard to control occupational exposure to beryllium at DOE facilities. The Department has a long history of beryllium use because of the element's many nuclear applications. Beryllium metal and ceramics are used in weapons, as reactor moderators or reflectors, and as reactor fuel element cladding. Inhalation of beryllium dust or particles can cause chronic beryllium disease (CBD), which is a granulomatous lung disease caused by a delayed hypersensitivity response to beryllium in the lung.

The current DOE permissible exposure limits (PELs) for beryllium were adopted in 1970 from the Occupational Safety and Health Administration's health standard, 29 CFR 1910.1000, Air Contaminant-- Table Z-2. After the PELs were adopted, the industry experienced a significant reduction in the incidence rate of the disease. This led to the belief that CBD was occurring only among workers who had been exposed to high levels of beryllium decades earlier (i.e., in the 1940s). DOE is now discovering cases of CBD among workers who were first exposed in the 1970s and 1980s. DOE has found that some of these cases are occurring among workers who were exposed to levels well below the PEL for beryllium.

Although a small amount of research and production involving beryllium continues, the workers at risk for CBD are primarily those who were exposed prior to cessation of weapons production in 1989. However, as decontamination and decommissioning (D&D) work accelerates, DOE is concerned that more workers will be at risk for beryllium exposure.

DOE has concluded that current beryllium standards may not be adequate to protect workers. Therefore, DOE is gathering data, views and other relevant information to develop a revised standard for occupational exposure to beryllium at DOE facilities.

2. Public Forums and Written Comment Opportunity

DOE is holding the two public forums and inviting written comments in order to gather scientific data, information, and the views of DOE and DOE contractor employees (beryllium workers and their representatives) line managers, industrial hygienists, safety professionals, physicians, health professionals, scientists, and others. DOE is also inviting individuals in academic institutions, general industry, trade associations, and other government agencies who have expertise in the health effects, exposure monitoring, appropriate controls, and medical monitoring for beryllium to participate.

To help focus oral and written comment, DOE includes in this Notice a set of questions covering a variety of beryllium-related topics. Responses to these questions would be extremely helpful. Participants should bring 5 copies of their oral presentation to the forum and submit them at the registration desk. In order to accommodate as many participants as possible, individual oral presentations will be limited to 10 minutes, unless the presiding official determines that a different allocation of time is appropriate.

Questions for Comment

The Department is especially interested in answers supported by evidence and rationale whenever possible, to the following questions.

1. Should an 8-hour time weighted average (TWA) permissible exposure limit (PEL) other than the current 2 ug/m³ be adopted? If so, what level should be established? Please provide evidence for establishing a different PEL.
2. Should a short-term exposure limit (STEL) be established for intermittent exposures? If so, at what level should the STEL be set? Please provide evidence for establishing a STEL.
3. Should an action level be adopted? If so, what should the action level be? What actions should be triggered by this exposure level? Please provide evidence for establishing an action level.
4. Should a policy of maintaining exposures as low as reasonably achievable (ALARA) be

adopted? Please provide evidence and rationale for adopting an ALARA policy.

5. If an ALARA policy is adopted, is the personal monitoring needed to measure performance feasible?

6. If a level was recommended in questions 1 through 3, is the recommended level technologically and economically feasible? Please provide evidence for establishing feasibility.

7. Will the introduction of a more stringent beryllium standard in any way reduce the demand for beryllium-containing products? If so, to what extent will (or can) the demand for these products be reduced and what would be the losses to industries that are affected?

8. Please describe the job titles and provide job descriptions for workers exposed to beryllium. Describe the operations that present the potential for beryllium exposure, each worker's location relative to sources of beryllium and the activities that the workers perform during the operation. In particular, if you are involved with decontamination and decommissioning work, please characterize the types of activities in this work where beryllium exposures can occur.

9. Please describe the frequency and duration of activities with potential or actual beryllium exposures. Identify the number of employees potentially exposed (i.e., workers not directly exposed but in an area where beryllium is used or working on tasks where exposures are negligible due to existing controls) as well as those with known exposures.

10. What is the lowest practical limit of detection of the sampling and analytical method for beryllium for both an 8-hour TWA PEL and a STEL?

11. What would be an appropriate monitoring strategy for airborne beryllium? What are the cost implications of different strategies? Would an appropriate strategy seek to demonstrate compliance with an exposure level, or seek to measure typical exposures? Should statistical methods be used to determine the sample size that is large enough to obtain the desired degree of precision in estimating the airborne beryllium exposure?

12. Are there exposure models that predict the incident of beryllium-related death and disease? Please provide references to these models.

13. Is smear sampling accurate enough to be acceptable for evaluation of beryllium contamination on all surfaces? Please provide evidence of smear sampling's efficacy for determining removal efficiencies.

14. Should statistical methods be used to determine the sample size that is large enough to obtain the desired degree of precision in estimating the beryllium contamination for the surface area of concern? Please provide evidence and rationale for statistical methods used to evaluate surface contamination.

15. Should any permissible surface contamination level be considered acceptable for workers who are beryllium sensitive? If so, what is the acceptable level? Please provide evidence and rationale for acceptable surface contamination level.
16. Are there any indications that establishing ultra-low permissible surface contamination levels would provide any additional protection to workers? Please provide evidence of the health protection benefits and cost of implementing various permissible surface contamination levels, for example, the "stop work level."
17. What standards for contamination control should be applied to beryllium operations? Please provide descriptions of current practices for swipe sampling, levels acceptable in access controlled areas, levels acceptable for facilities and equipment released for uncontrolled use, and work rules for personal hygiene.
18. What engineering and work practice controls are routinely applied for beryllium work? How do the various controls compare with respect to efficiency in reducing exposures? Please support your answer with exposure data and a discussion of the time and cost required for implementation of various controls.
19. Could current beryllium exposures be reduced by the use of additional available engineering controls and work practices? Would such reductions be economically feasible? Please support your answer with a discussion of additional available controls, their efficiency in reducing exposures, and the associated time and cost for implementation.
20. Are there unique conditions in work settings where beryllium is produced or used that make engineering controls infeasible?
21. Are there conditions under which respirators use should be permitted? If so, what are the conditions? What respirator fit testing requirements should be included in the standard and when should such testing be required?
22. To the extent you might be able to forecast possible beryllium control measures, what would be the possible financial impacts of incremental spending for such controls by your facility? How large an effect is incremental spending on beryllium controls likely to have on the costs of products or services that you provide?
23. What examinations and tests should be included in a medical monitoring program aimed at the early detection of chronic beryllium disease? What should the time interval be between periodic medical examinations or tests?
24. What criteria should be used to determine who must be included in a medical monitoring program? Using this criteria, how many current workers at your facility would be included in the medical monitoring program.

25. Do you currently have a medical monitoring program for workers exposed to beryllium? What does this program entail (i.e., identify required tests, examinations, frequencies, costs, criteria for inclusion in the program). How many of your current workers are in the medical monitoring program?

26. Are estimates available of the medical costs associated with beryllium-related disease? Please provide references to these estimates.

27. Regarding current policies for medical removal:

a. What are the current practices and criteria for removing overexposed workers from beryllium jobs?

b. What specific biological indicators or clinical test results are currently used to determine overexposure?

c. For workers who have been removed from jobs because of beryllium overexposure, what alternate types of jobs were they given? Does this assignment have any impact on wages, position classification, etc.? How long does this reassignment usually last?

d. Are reassigned workers ever returned to jobs that include beryllium activities? If so, what are the criteria for returning?

The draft agenda for the forums is as follows:

Draft Agenda

Opening remarks

Presentations by Participants (10 minutes per speaker)

Next Steps--Closing

Issued in Washington, DC, on December 19, 1996.

Tara O'Toole,

Assistant Secretary Environment, Safety and Health.

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